

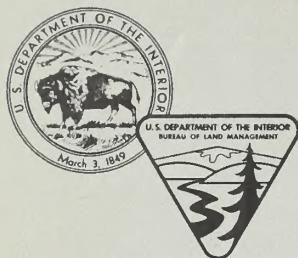
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OUR PUBLIC LANDS

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UPSIDE DOWN GEOLOGY
PAGE 4





U.S. DEPARTMENT OF THE INTERIOR
Rogers C. B. Morton, Secretary

BUREAU OF LAND MANAGEMENT
Boyd L. Rasmussen, Director

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

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Jim Robinson, Editor

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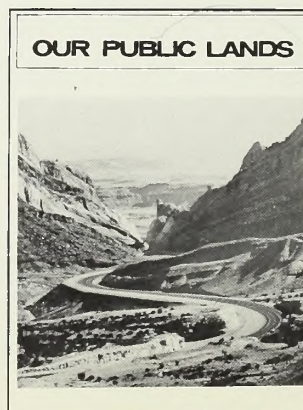
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The Cover

Spotted Wolf Canyon seen from a view area constructed by the State Highway Department. View is east toward Green River. (Photo by Lorin J. Welker)

HIGHLIGHTS

Johnny Horizon Award Presented to Boy Scouts of America

Interior Secretary Rogers C. B. Morton gave a Johnny Horizon National Award, the first award he has presented since taking office, to the Boy Scouts of America in February.

Irving J. Feist, BSA president, accepted the award. Representing the millions of Boy Scouts in the nation were Eagle Scouts Kenneth E. Spann II of Washington, D.C., and Charles T. Illsley of Salt Lake City.

The Department's Johnny Horizon program, which emphasizes antilitter and environmental improvement, is "terrific," Secretary Morton said. He called it "one of the most important we have."

The Johnny Horizon award cited the Boy Scouts "for exceptional service of national significance in improving the quality of the environment through their efforts to keep the public lands free of litter."

Secretary Morton noted that "the value of this program is that it gets the job done by providing a way every American, young or old, to contribute to the improvement of our environment."

The Secretary told his visitors that the responsibility of the public lands "makes the Secretary of Interior a fair-sized rancher." The Bureau of Land Management is responsible for managing more than 20 percent of all the land in the United States.



From left: Interior Secretary Rogers C. B. Morton; BSA President Irving J. Feist; Eagle Scouts Kenneth E. Spann II, Washington, D.C., and Charles T. Illsley, Salt Lake City.

"You can help us get a feeling of national pride in those public lands, the feeling of excitement that people should have about them because they belong to you—they don't belong to me or the Department or the Bureau, they belong to the people.

"If the people are excited about them, want to keep them clean, sparkling, we'll have a great America for generations to come. How we handle our public lands is really the strength and future of America."

Louisiana OCS Oil Lease Sales Total Record \$845.8 Million

In a record-shattering sale of Outer Continental Shelf oil leases off western Louisiana in December, bids accepted by the Interior Department totaled more than \$845.8 million.

This broke the previous high record for a single sale by nearly a quarter of a billion dollars. The February 1968 figure of \$602.7 million for a single sale was the previous high.

The \$845.8 million was accepted for the privilege of developing 116 tracts. Development of the leases also will yield one-sixth of the value of all oil and gas produced in the form of royalties to the Federal government, plus annual rentals.

Companies and individuals bidding offered a total of \$2,877,429,559 in bonus bids, the greatest amount of money exposed in any previous OCS sale. All 127 tracts offered for sale were bid on, and all but 11 of the high bids offered were accepted.

The highest per acre bid price was paid by a combine headed by Pennzoil which bid \$12,874.79 per acre—an all-time high record for a general sale. This tract contained 2,500 acres and brought \$32,186,979.39 for the second highest bid of the sale.

The highest bid of the sale for a single tract was \$38,184,350 for 5,000 acres, a per acre price of \$7,636.86 offered by Trans-Ocean Oil, Inc.

'We've Got a Lot of Work to Do' Is Johnny Horizon Film

A full-color, 8-minute film depicting a Johnny Horizon cleanup campaign in the Calico Mountains near Barstow, Calif., is now available for interested groups.

The film, "Getting Involved," is narrated by Burl Ives and shows how 1,300 people—men, women, and children—joined the California Outdoor Recreation League and BLM in a weekend cleanup near Barstow.

Groups wanting a print should contact the nearest Department of Interior office. □

UPSIDE DOWN GEOLOGY. . . *in a land unspoiled by time*



Aerial view of Spotted Wolf Canyon through San Raphael Reef.

Ancient geologic time towers above the highway, while later strata of the San Raphael Reef are at motorist's eye level.

San Raphael Reef, where ancient upheaval put most recent geologic strata at bottom, older strata at top.



"70 miles of I-70 to open in '70"—so read the newspaper headline about one of the most unusual stretches of the Nation's interstate highway system. More than 60 miles of this section of Interstate 70, from Green River to Fremont Junction, Utah, is within BLM's Price District. The new section cuts some 50 miles from the road distance between Denver and Los Angeles. But probably even more important, the section through the San Rafael Swell opens to the public for the first time a spectacular, remote area of geologic and scenic grandeur.

The area has fascinating names like Robbers Roost, Shinarump, Midas Mine, Temple Mountain, the Sindbad, the Wickiup, and Jessie's Twist.

For the geologist, the San Rafael Swell is an outstanding laboratory of geologic formations. For the photographer the area is seldom equalled in scenic beauty. For the outdoorsman there are canyons and trails where hardly anyone else has been. For the archeologist the region abounds with evidences of the "ancient ones," or Anasazi as they are called by the Indians of today. For the miner, there is uranium or

copper or coal or oil or a variety of other minerals in lesser amounts. The area also has deer, wild horses, wild burros, wild goats, a wide variety of birds, smaller animals, and domestic cattle and sheep.

The San Rafael Swell is estimated to have been pushed up to an elevation of about 12,000 feet originally. Erosion dating back through dim centuries of geologic time has diminished it to about 7,500 feet now. The Swell actually pushed up inside itself. Because the top has weathered off, the oldest geologic strata are now exposed at the highest elevations and the more recent layers are exposed at the bottom edge of the Swell—next to the San Rafael Reef on the east.

Now that travelers are able to enjoy in comfort a ride through this panoramic part of Utah on a modern highway, let's take a quick trip, starting at Green River.

On your right—to the north as you travel west—are the Book Cliffs, rising to a height of 10,000 feet. You can see the LaSal Mountains in the distance to the southeast and the Henry Mountains to the southwest, both lofty enough to be draped with a snow mantle most of the year.

Directly west appears what could be the skyline of a megalopolis. These are the jutting peaks, crags and crannies of the Box Mesa area and the San Rafael Reef. The latter is a layer of Navajo sandstone, turned perpendicular to the rest of the area. The Reef rises 1,500 feet, with numerous arches, caves, and canyons. Just east of the Reef and north of the highway, in the Morrison geologic formation, there are several uranium mines.

After crossing the San Rafael River (which origi-

By **LORIN J. WELKER**

District Manager
BLM District Office, Price, Utah

and

JACK M. REED

Assistant to the State Director
BLM State Office, Salt Lake City, Utah



Ghost Rocks, the silent sentinels which watch over the silent land.

nates in the Wasatch Plateau and runs east to southeast into the Green River) the motorist may want to stop. About an hour's walk to the north is Black Dragon Canyon where there are 10- to 12-foot tall Anasazi pictographs of human figures on the canyon wall and an irregular, oriental-like drawing of a dragon. An ordinary passenger automobile cannot be taken into this deep-cut canyon.

The highway cut through the San Rafael Reef follows Spotted Wolf Canyon, named for the amazing array of colors in the various rock strata. After 3 or 4 miles the view opens into large pastures bounded by deep canyons topped with grotesque rock formations. Aptly named the Ghost Rocks, in the eerie moonlight the Navajo and Coconino sandstone sentinels guard the slumbering meadows.

Along the interstate, any side road will take you into a different canyon—and a different scene. There is an area known as the Head of Sindbad. South from here across the San Rafael Desert is the Robbers Roost area, once used by the famous Butch Cassidy and the Sundance Kid as their hideout while they were intimidating this part of the West with their forays. For many years this area was so remote and inaccessible that only a few hardy outlaws, one or two ranchers, and a few prospectors ever inhabited it.

A little further along I-70 a side road to the south leads tourists into the Copper Globe. Here copper ore was found adjacent to the Navajo sandstone formation

and a mine was developed. A smelter also was built and evidence remains of the pinon-juniper fuel they used. There is a rick of trees and logs approximately 150 feet long, 70 feet wide and 12 feet high still piled next to the smelter.

On either side of the new highway there are canyons which are several hundred feet deep, sometimes as wide as a mile, sometimes so narrow they can be crossed by foot. Crossing the highway bridge over Eagle Canyon a traveler has an expansive view of the area to the west—to the Wasatch Plateau and the canyons between.

As you drive down the west side of the San Rafael Swell, you cross the same geologic formations and strata that you crossed going up on the other side. But on the west the Morrison Formation predominates. In that strata are found fossilized remains of prehistoric animals, including the dinosaurs.

A 40-mile trip to the north will bring you to the Cleveland-Lloyd Dinosaur Quarry, which is administered by BLM. Here there is a visitor center with interpretive displays about the dinosaurs. You can see also some of the fossilized bones in place in the ground where they were found. There are picnic facilities at the quarry but no camping accommodations.

Scenic I-70 is a new path across public lands. Although the highway is a high-speed road, strangers and tourists should allow themselves the time to enjoy to the fullest this trip through upside down geology in a land unspoiled by time. □

PICTURES INSTEAD OF WORDS

IN MANY places on the public lands this summer visitors will see roadside signs with symbols instead of words. The unmistakable symbols will be easier recognized than words at highway speeds and are so universal in meaning that even a pre-school-age child can interpret them, and there is no language barrier.










For example: hunters can watch for a silhouette of a man aiming a rifle, fishermen will know they've arrived when they spot a fish under a fish hook, a recreation vehicle trail will be marked with a pictured jeep, gas stations will be noted by the outline of a gas pump, and a campground sign looks like a pitched tent. If the pictured symbol has a red diagonal slash through it, then the activity is prohibited.

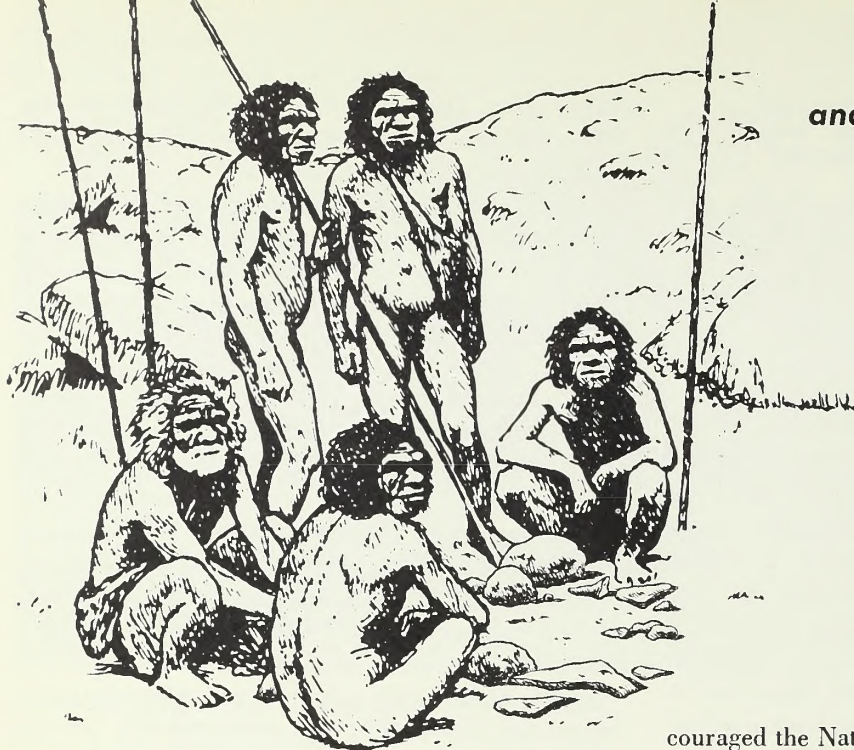
The signs will be made of plastic and will be cheaper to manufacture and maintain. Wherever necessary for driver safety, they will be mounted on breakaway posts. The symbols will be white against a background color appropriate to the subject and area.

The 77 signs were adopted experimentally after a 3-year study by an Interagency Task Force Committee composed of personnel from Interior's BLM, Bureau of Sport Fisheries and Wildlife, Bureau of Indian Affairs, and National Park Service; the Agriculture Department's Forest Service; Defense Department's Corps of Engineers; Transportation Department's Federal Highway Administration and its Office of Driver Environmental Programs; and the National Highway Safety Bureau.

The new sign system has the approval of the UNESCO International Committee for Breaking the Language Barrier. The new system will be used initially in National Forests, Parks, Wildlife Refuges, and public lands administered by BLM, but it is hoped that State Highway Departments eventually will extend the system across the Nation. The sign committee will continue to operate as a clearinghouse for additions to the Federal recreation symbol system. As the acceptance of the symbol system grows, it will reduce the clutter of verbal signs that constitute "visual pollution" on the public lands. □

Reducing "visual pollution" on public lands

	Drinking Water		Trailer Sanitary Station		Snowmobiling
	Information		Trail Shelter		Swimming
	Picnic Shelter		Picnic Area		Horse Trail



THE MAGIC OF ANTIQUITY

WHAT MAY be significant evidence that man lived in the southern California area 50,000 to 100,000 years ago is being explored in an archeological dig in the Calico Hills north of San Bernardino. The previous estimate of earliest human habitation on the North American continent was 20,000 years.

Though some authorities still question the origin of artifacts retrieved on the Calico site, the claim that man *did* live there at least 50,000 years ago comes from one of the world's most renowned archeologists, Dr. L. S. B. Leakey of Nairobi, Kenya. He discovered the 1.7 million year-old *homo habilis* in Olduvai Gorge, Tanzania, a little more than a decade ago.

Dr. Leakey became interested in the Calico site when he saw some of the artifacts which County Archeologist Ruth Dee Simpson took to Europe in 1958. Five years later he visited the site. He thought so much of its potential that he selected a 25-by-25-foot area for excavation and marked its corners with stone cairns. He en-

couraged the National Geographic Society to make the first of several grants for the work and became project director, a position he still holds.

Flakes Are Remnants

Along the steep trail from a dirt road up the Calico foothills toward the site, the ground is littered with flakes that look like flint. Actually, they are chalcedony, chert, and jasper. Dr. Leakey and Miss Simpson believe these flakes are remnants left by ancient stone age toolmakers 200 centuries ago—or more. Visitors are welcome at the site, but they are asked not to handle the flakes so that visiting scientists can see them in place.

Archeological digs are sub-surface jobs, a matter of painstakingly excavating a small shaft. Grubbing out 3 inches of depth may take all day because of the meticulous observation, measurement, and triangulation of the material the digger uncovers. Data must be recorded about the material in place before it is hoisted in a bucket to the top of the shaft for further study. At the Calico dig, it goes like this:

An entrance trench is used in training volunteers. They are taught to keep the walls straight as they ex-

By TOM EVANS

Information Specialist
BLM State Office, Sacramento, California

cavated, aided by plumb bobs suspended from the roof. The plumb bob lines stand 6 inches from the walls. Each worker is assigned a 5-by-5-foot section of the area around the perimeter, thus leaving a center section or "witness" column. This column may later be excavated when more is learned about what has been found to date.

The workers must use small hand tools: Dental picks, linoleum knives, shoemakers' awls, hammers and chisels, nut picks, and small brushes. The digging is done to a depth of 3 inches across the entire 5-by-5-foot area. The information for each flake and tool is catalogued. The artifacts then are taken to the San Bernardino County Museum to await future analysis.

The Control Pit already is 70-feet deep. A narrow ladder clings to one wall, and air has to be pumped down the slim shaft for the worker below. T-shirt temperature prevails at the bottom of the shaft even in the coolest weather. The work seasons ordinarily run from November through May. Not much work can be done after that because of the heat in the pits. Summer temperatures get as high as 120 degrees on the surface.

Master Pit I, where evidence of mastodons or mammoths has been recovered, has been excavated to a depth of 20 feet. Master Pit II which appears to have been a toolmakers' worksite is down to 36 feet. But an overburden of from 100 to 200 feet covers the shore line of an ancient lake which the archeologists believe may have been the toolmakers' campsites. The major purpose of the Control Pit is to obtain a complete cross-

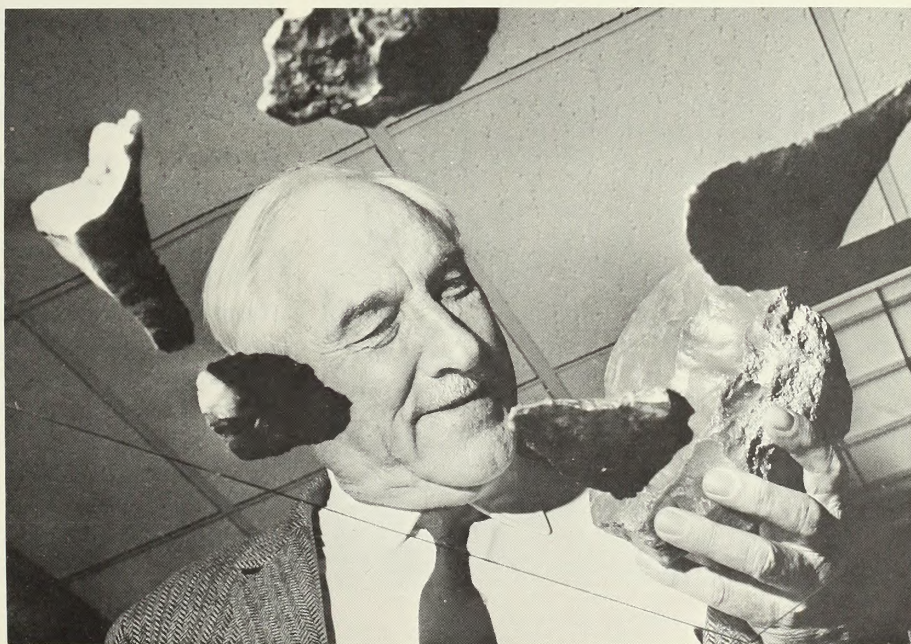
section of an ancient alluvial fan and lake bed which existed millions of years before the Ice Age.

Soil Screened First

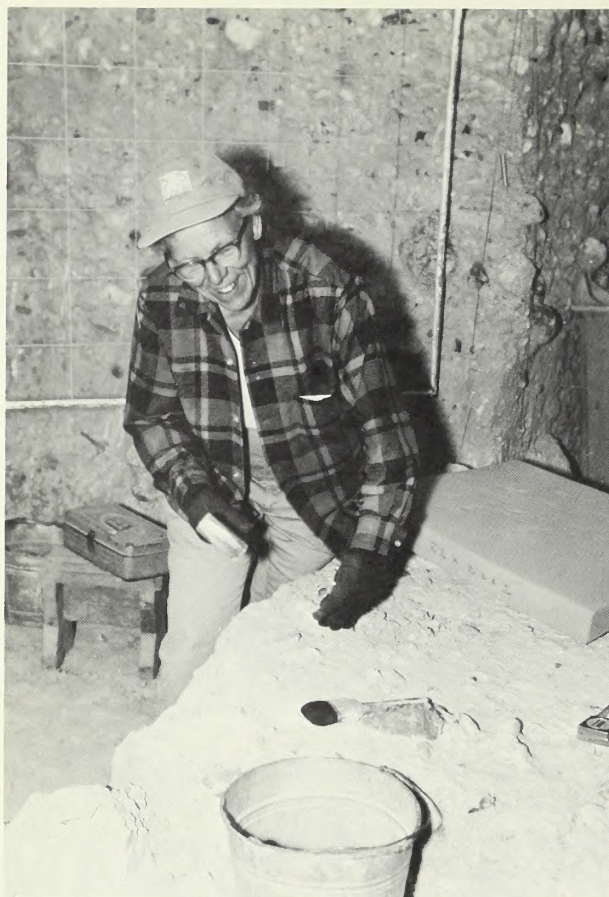
More than 13,000 pieces of chalcedony, chert and jasper have been brought up from the Control Pit, but there have been no tools or tool flakes, as in Master Pit I at Elevation 2214 and Master Pit II at Elevation 2225. Nevertheless, just as in the Master Pits, the soil from the Control Pit is screened first through 1/2-inch screen, then through 1/4-inch screen for artifacts. In addition, there are spot checks with window screening.

The absence of "technical" (apparently man-made) flakes in the Control Pit and their abundance in the Master Pits supports the theory that the flakes were left by tool makers, rather than having been produced naturally and scattered about by floods. Some scientists believe the flakes *are* the result of natural pressures and the striking of one stone against the other as water rushed over the fan. But the Calico dig archeologists say there are many indications that the flakes were left by man:

- Hundreds of technically important flakes with characteristics attributable to man were found in the 25-by-25-foot Master Pits, while none were found in outlying test pits.
- The tools and rocks show no orientation along a water flow; instead they lie in every direction. Moreover, most of the flakes and tools show no water wear.



Dr. Leakey examines jasper core. Ripple marks may indicate where flake was struck off to make primitive knife. (United Western Newspapers, Inc., photo)



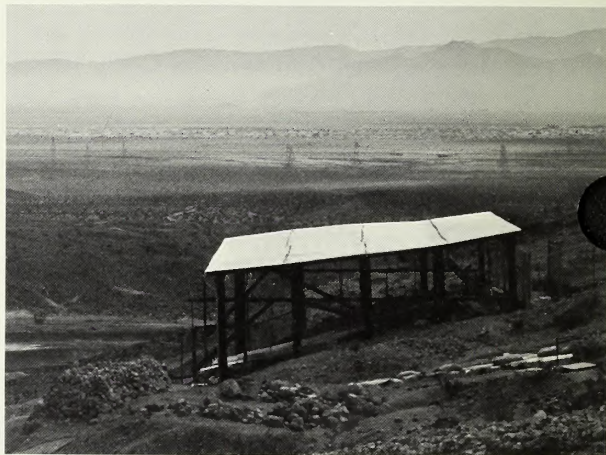
Volunteer in Master Pit I sifts particles for proof that stone age toolmakers worked here.



Rocks from Master Pit II, dated at 40,000 years old, wait detailed examination.



Volunteer screens material from Master Pit II for small artifacts that may have been missed by excavators.



Roofed Control Pit makes summer work possible when temperatures may reach 120 degrees. View overlooks what was once 1,000-square-mile prehistoric Lake Mannix.

- The cores from which the large and medium size flakes could have been struck are few in number. Had natural pressures removed these flakes, they would have been found with the cores. Some cores may have been the tools that early man would have taken away.
- The flakes show a high degree of selection for good quality materials. Lesser quality materials remain unmodified.
- Sometimes a single specimen reveals more than one flaking technique—for example, a blow with a pointed “hammerstone” to detach a flake and thereafter flaking by a different technique.

Several hammerstones and "anvil stones" have been found. In using the anvil stone, the core from which a tool was to be made was struck against the ridge of the anvil stone to remove flakes.

No Human Remains

Fragments of mastodon or mammoth tusks, found in Master Pit I, have been determined to be 40,000 years old. There has been no discovery, however, of any human remains, nor is it believed that any will be found in this ancient workshop area. Although there could have been accidental death, it is unlikely that anyone would have died here because the oldsters and the very ill wouldn't have come up the steep hill from their camp by the lake to work. If someone had died here and the body remained exposed, the bones would have been subject to weathering and animals. Of course, the teeth would be likely to survive, and that is one reason why the soil is screened.

Master Pit II started out as a 15-by-15-foot area covered by a corrugated steel roof to protect the excavation walls from erosion and to make some summer work possible. The first 10 feet of digging was through fine grains and gravels. Then came a layer of boulders which weighed up to 800 pounds. Almost immediately below the boulders, the flakes began to occur. At a total depth of 23 feet and 3 inches, a "hearth" was found in December, 1968.

The hearth, which is still intact, was formed of 13 stones in a semicircle. The pattern of the stones is three large, two small, three large, two small and three large. The large stones are about 7 inches long, the smaller ones about 4 inches. One of the larger stones was removed for tests by Dr. Rainer Berger of the University of California at Los Angeles, a noted expert in dating artifacts. The stone was cut in half and one of the pieces was sent in April, 1970, to Prague where tests were conducted with the only equipment sensitive enough to handle such old material. About 6 months later, a report came back: The part of the stone that had been pointing toward the center of the hearth had been subjected to 6 times as much heat as the end away from the center, or a temperature of about 400° centigrade—an amount of heat that could have been caused by a wood fire!

A second feature, also possibly a hearth, was found 2 weeks after the first, about 17 feet away and at the same elevation. There was no pattern in the placement of different size stones in this hearth, however. Further tests are needed to determine how long ago the hearths were used.

Studies indicate that bands of ancient people migrated across a land bridge between Siberia and Alaska and moved southward along a route on the continental shelf—a route that skirted the great glaciers of a million years ago. When they had found a climate that was warm enough, they moved inland.

Dr. Leakey believes the ancient toolmakers came to the shores of prehistoric Lake Mannix which was formed by heavy rainfall and runoff from the San Bernardino Mountains. There were no glaciers, and the climate was characterized by rainy periods. At its highest shoreline (elevation 1,880 feet), still clearly visible, Lake Mannix spread across an area of more than 1,000 square miles.

Algal Remains

Another distinct shoreline is seen at the 1,780 foot elevation. Organic tufa containing remains of algae deposited on boulders at this elevation has been carbon-14 dated at 19,750 years old. The lake then had shrunk to about 800 square miles. It covered what is now the plain of chest-high creosote bush through which Interstate 15 runs, with Coyote Dry Lake to the northwest and Troy Lake to the east.

Dr. Leakey believes Lake Mannix provided an ideal situation for early human habitation: Flowing water, a large quantity of stone suitable for making tools and weapons, and an open plain where animals must have been present in large number and variety. If the people came at that time, perhaps even more than 100,000 years ago, they found the lower stage of an alluvial fan that had begun spreading out of the Calico Mountains and had built to a depth of more than 100 feet. Then, Mule Canyon was cut by natural forces, and no more alluvium could reach the fan. Since that time, it has been eroding.

The Calico dig began in 1964 with Dr. Leakey and Miss Simpson as project directors and Dr. Thomas Clements, Chairman of the Geology Department, University of Southern California, as project geologist.

The Calico site is located on land administered by the Bureau of Land Management. The excavations have been conducted with permits issued by the Secretary of the Interior under provisions of the Antiquities Act of 1906.

Although there is a lot of work yet to be done, the present archeological excavation is virtually completed except in Master Pit II and its entrance tunnel. The bulk of the work remaining is geological excavation.

And still, somewhere in the future, perhaps in the laboratory, lies the answer as to whether ancient man once lived along the shore of Lake Mannix. □

THE TWO Bureau of Land Management men had ridden out early that morning to check the condition of the wild horses and the range. September 4, 1970, was one of those "bluebird" days in Montana's Pryor Mountains, the kind of day when horses seem full of energy and "raring to go."

Range Technician Mickey Obert and Natural Resource Specialist Richard Bertolino had logged considerable time in the saddle since the Pryor Mountain Wild Horse Range was established almost 2 years before. At one time or another, they had observed all of the horses roaming the rugged 32,000-acre range, but this day they saw two newcomers. One of the mares, who was weak and limping, was being followed by twin foals.

Twins don't often occur among horses, and they are practically unheard of under the harsh environmental conditions found in the Pryor Mountains.

Just a few days later, the trio was again seen, and Obert now noticed that one of the twins appeared in a weakened condition. Feeling that some action should

be taken to help the animals, the two men requested and got the go-ahead to bring the mare and the colts in for some intensive care.

On September 10, the trio was located and easily roped. The filly colts were carried by the two riders and the mare was so weak that she submitted to being led. Arrangements had been made earlier for a Lovell, Wyo., veterinarian, Dr. Edwin L. Lowe, to check the condition of the animals, and he quickly administered antibiotics and an intravenous feeding of sucrose to the mare. The treatment was repeated the following day but efforts to save all three had come too late—on the third day the mare and one of the colts died.

The surviving colt remained at Dr. Lowe's clinic under the care of Dr. and Mrs. Lowe until mid-September when she was moved to Mickey Obert's farm near Belfrey, Mont. BLM now found itself the legal guardian of the orphaned colt, now named "Wild Horse Annie" on her Montana stock inspection certificate. The name honors Mrs. Velma B. Johnston, president of the International Society for the Protection of Mustangs and Burros, but who is probably better known as "Wild Horse Annie."

At the Obert's farm, Mickey, his wife Josephine, their 20-year-old son, and two teenage daughters see to it

By **CHARLES E. MOST**

Assistant to the State Director
BLM State Office, Billings, Mont.

LITTLE ORPHAN ANNIE



STATE OF MONTANA
HORSE
 INSPECTION CERTIFICATE

Shipped by
 Name UNITED STATES OF AMERICA
 Address AMERICA

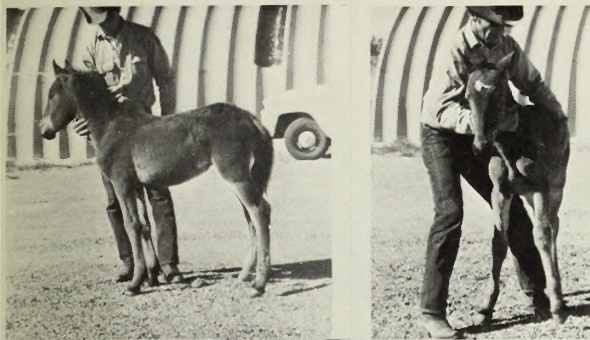
County CARBON
 I have this 1ST day of OCTOBER, 1970, inspected the following horses at CROOKED CREEK, Montana, for removal by
 (truck) from THE PRYOR MOUNTAIN WILD HORSE RANGE
 (Town)
 To STATES OF MONTANA & WYOMING

NUMBER OF HEAD	BRAND	LOCATION OF BRAND	DESCRIPTION	REMARKS	PURCHASED FROM
ONE	NO BRAND	DAY FILLY	COLT	STAR & SPUR FOREHEAD	
COLT NAMED "WILD HORSE ANNIE"					
Total Number <u>ONE</u>		Fee Charged <u>NONE</u>			

It appearing to me that the above named person is rightfully in possession of the livestock listed above, permission is hereby given to remove the same from this county. This certificate does not exempt the person to whom it is issued from subsequent brand inspection and payment of fees for same at points where inspection is required by state laws or regulations.

Wm L Cherry
 Inspector

3
 BLM-USDI - GUARDIAN FORM 35-A



that Annie literally has the best of everything. She is growing bigger and stronger by the week on a diet of oats and hay. Her companion is a Welsh pony belonging to the Oberts.

The future for little Annie is uncertain. She could not now survive in the wild, because critical stages for the Pryor Mountain horses come early in life and then again between the ages of two and three, when horses normally shed their old teeth for a new set. Annie would have to be at least three before she would have much chance of surviving among her wild brethren. There is also the chance that she would be rejected by the wild ones.

But for now, Annie is growing fat and sassy on the good life. She is reasonably friendly towards people. She shows no inclination to bite but she can whirl and lash out with her hind feet quicker than you can say "Wild Horse Annie."

Her stock inspection certificate gives Annie a protected, legitimate role in the scheme of things. Mrs. Johnston considers it "a most significant document."

"The first evidence of status ever officially issued on a wild horse, it designates the Bureau of Land Management, United States Department of the Interior, as Annie's guardian," Mrs. Johnston notes.

"Because America cared what happened to the wild horses of the Pryor Mountains, and let it be known that it cared, Annie is very special." □



RETURN OF THE MUSK OX

By JERRY L. HOUT

Assistant Refuge Manager
Bureau of Sport Fisheries and Wildlife
Bethel, Alaska



Lassoing Alaska style. Animal being roped took up stand against previously hobbled yearling.

AFTER AN absence of nearly a century, the musk ox (*Ovibos moschatus*) is now firmly re-established on his former range in Alaska. Through transplanting operations dating back to 1936, more than 700 musk oxen are feasting on the sedges and lichens of Nunivak, Nelson and Barter Islands, in addition to Feather River near Nome and Cape Thompson.

The most recent—and most successful—transplant was accomplished last year when 85 animals were moved by air from Nunivak Island to public domain lands on the Alaskan mainland.

When the musk ox once again becomes plentiful, an important value to the Alaskan economy promises to be his dark gray underwool, or qiviut. Located beneath the outer layer of hair, qiviut is incredibly lightweight, yet warm enough to protect the ox in 60-below-zero weather. If the musk ox can be raised like cattle, his wool may someday be as commercially valuable as cashmere.

One thing is for sure: He is not valuable for his beauty. A musk ox is ugly, even for an ox. In fact, he looks like a prehistoric bison, though shaggier. Somewhat smaller than a domestic ox, a bull stands about 4 to 4½ feet at the shoulders and weighs up to 900 pounds. His outer hair is brownish-black with a lighter saddle mark behind the shoulders, and is so long—about 20 inches—that it sweeps the grass tops as the animal moves. His unusual horns sweep downward and forward, then hook upward.



Four bulls take up defensive position with frozen Bering Sea at their backs.

Sounds menacing, but some people say the musk ox is very endearing when you get to know him. Those who have studied the creatures at close range describe them as docile, playful, and highly intelligent. Calves in captivity have been known to follow people around hoping to be scratched and petted.

In addition to his protective coating for cold weather, the musk ox has other natural endowments that make him well-equipped to survive in Arctic country where few other large animals could succeed. Agile and sure-footed on icy terrain, he has stout, rounded hooves for easy travel on hard-packed snows. He also uses the sharp edges of these hooves to reach ice-encrusted plants. Then he uses his tough-as-rubber nose to break dwarf willows, lichens, and other plants out of the ice.

Herd of musk oxen graze in family groups. When trouble appears, they wheel into a protective line or circle, presenting a solid front to the enemy. Shoulder to shoulder, bulls and older cows stand in front, shielding the calves and yearlings.

How, then, does one capture and transport these "horned tanks"? Actually, they were captured for transplanting by a variety of methods, depending upon the age of the animal. Yearlings, which weigh around 150 pounds, were captured by hand after they were cornered, or occasionally by bulldogging from a moving snowmachine. The older animals were captured either by aid of immobilizing drugs injected by a dart firing gun or with an entangling net.

Use of the net involved separating an animal from

the herd and surrounding it with snowmachines. Two men, with the net suspended on ropes between them, simply dropped it over the ox's head. After becoming entangled, he could be pushed to the ground if he didn't fall.

The animals were hobbled at capture and placed on sleds to be pulled some 40 miles to the village of Mekoryuk. A corral of chain link fence was used to hold the captives until a transport plane arrived. Then the musk oxen were loaded onto the plane in stout wooden crates and flown to the release point.

Transplant operations are started in March because of longer daylight hours and—more important—adequate snow to allow the use of snowmachines for capturing and transporting the animals. A helicopter was tested, but the resident Eskimos on their snowmachines could operate under weather conditions that grounded the "chopper."

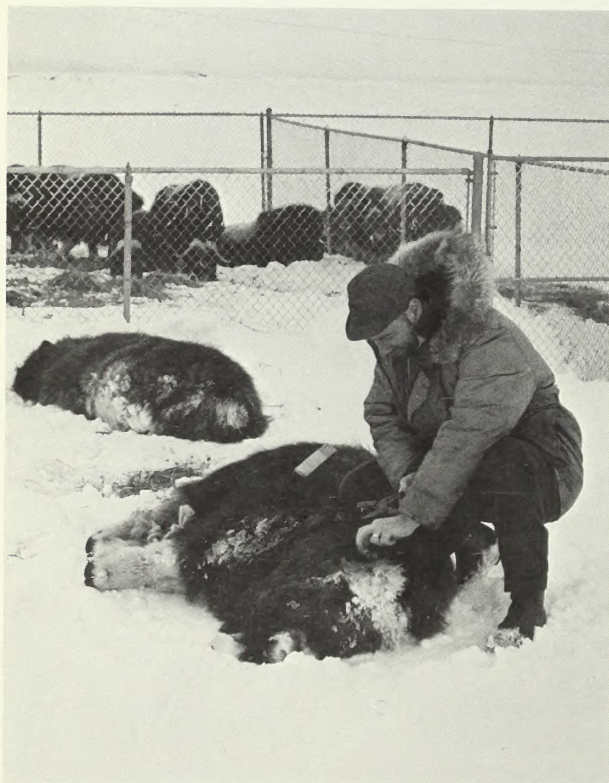
Most of the techniques were perfected in 1967 and 1968 on Nelson Island during experimental transplants by biologists of the Bureau of Sport Fisheries and Wildlife who accomplish the transplants, and the Alaska Department of Fish and Game, which is responsible for the animals after they are released.

Musk oxen once ranged throughout the Arctic regions of North America and Greenland but were depleted by predators and hunters until the last musk ox disappeared from Alaska in 1865. The species wasn't reintroduced until 1930, when 34 animals were brought from Greenland. These were kept at the University of



Crated animals were loaded aboard National Guard C-123 for flight to Barter Island.

Ear-tagging yearling before releasing into holding pen.

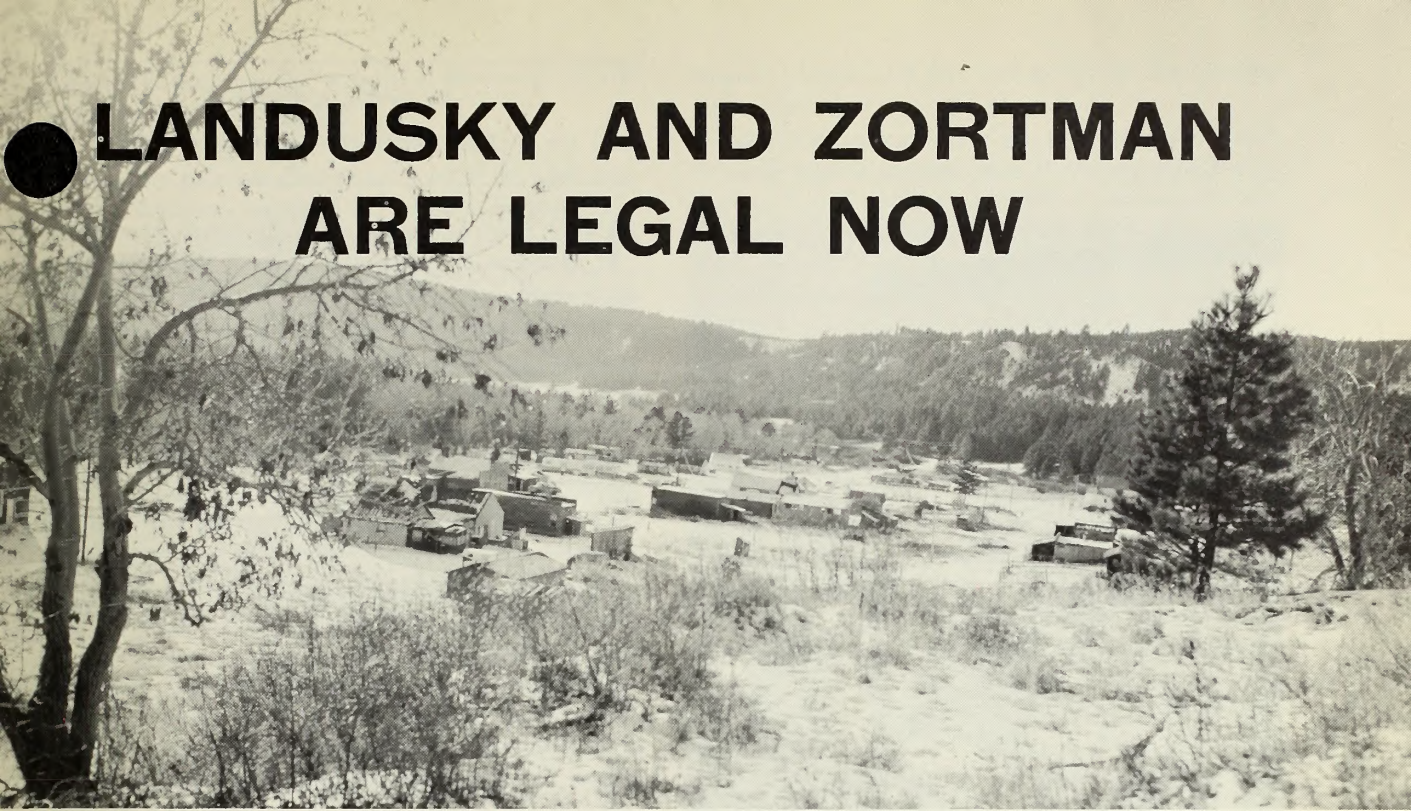


Alaska for 6 years and then moved to Nunivak National Wildlife Refuge.

Musk oxen were put on Nunivak Island to provide a pool of animals from which stock could be taken and re-introduced to their historic range. By 1967, biologists of the Bureau determined that the herd had reached a population sufficient to permit removal for transplants. In fact, the herd had grown to where it became mandatory to reduce animals to save the limited winter range: From a total of 31 in 1936, the population had grown to more than 700 by 1967.

Following the experimental transplants to Nelson Island, a total of 52 animals were moved from Nunivak to Barter Island on the Arctic National Wildlife Range in 1969. In the 1970 operation, 36 were moved to the Feather River near Nome, 36 to Cape Thompson south of Point Hope, and 13 to the Kavik River on the Arctic Slope.

The musk ox is listed as a peripheral species (rare within the United States although not in its range as a whole) by the committee on Rare and Endangered Wildlife Species. The transplant program, besides fulfilling the initial objective of re-establishing musk oxen on their historic range, will help assure the survival of the species by dispersing them. □



Landusky

They refused to become ghost towns

Zortman





TWO SMALL mountain mining camps in northern Montana, remnants of a once colorful mining era, have steadfastly refused to become ghost towns after a turn-of-the-century boom. Now the faith which Zortman and Landusky settlers had in their ultimate future has been justified. Although the townsite lands never were patented, through the Bureau of Land Management the settlers have now acquired legal title to their homesites.

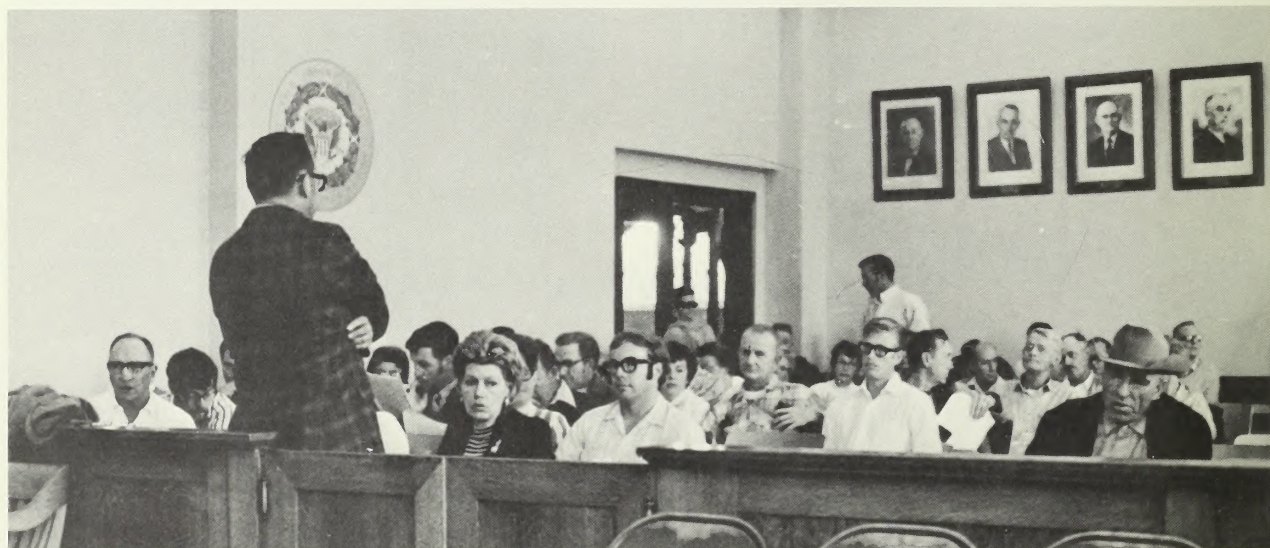
The two towns, situated on opposite flanks of the mountains, have lively histories. This was the stomping grounds for various outlaw types, including Butch Cassidy, Kid Curry, and the notorious "Wild Bunch." Gold was the main attraction.

Full scale placer mining operations in the Little Rockies were underway around 1890. Three years later, Pike Landusky, founder of the town that bears his name, discovered the first lode and subsequently developed the August Mine. To the east, Pete Zortman discovered gold in Alder Gulch and the resulting camp took his name. Development of additional mines—Goldbug, Pole Gulch, Independent, Mint, Alabama, Fergus, Ella C., and Hawkeye—soon followed.

Gold production ran high for several years but eventually dropped. The mines closed when World War II

Mr. and Mrs. Charles Kelsey receive their deed from Dante Solari, Manager of BLM Malta District.

Bidding for lots in Landusky and Zortman townsites. BLM's Glen Stickley officiates.



began, but there are still occasional flurries of activity and some assessment work.

Although people have lived in Zortman and Landusky since gold was discovered, most of the land occupied by the towns remained in Federal ownership.

The scenic, pine-covered region known as the Little Rockies area, part of the Fort Belknap Indian Reservation until gold was discovered, was placed under Forest Service administration in 1907. The jurisdiction of the area was changed in 1966 to BLM, Uncle Sam's official land surveying agency, and BLM surveyors, working under the Townsite Act of July 1, 1864, began working with local residents to convert the two old mining camps into legitimate townsites. BLM surveyors began platting the townsites into blocks and lots for eventual transfer into private ownership.

Under existing regulations, the land included in the two proposed townsites could be patented by either a trustee method or assertion of pre-emption rights. The residents chose the pre-emption route to title of their homes.

BLM surveyors soon laid out a total of 126 lots and filed approved plats in the Land Office in August, 1967.

Public reaction and renewed spirit seemed to echo a new "Bonanza" as the time approached for filing on the lots. On January 30, 1968, the opening order came for filing pre-emption claims.

Under the law, pre-emption right to purchase is granted to an actual resident. To qualify for a pre-emption claim in Zortman and Landusky, an individual was required to have settled on a resident lot and to be residing there on March 1, 1966. One additional lot could be acquired if he had made substantial improvements upon it and his resident lot claim was valid.

Forty-nine pre-emption claims were filed in April 1968—21 in Landusky and 28 in Zortman. Of the group, only 30 pre-emption "proofs" were allowed, with 44 lots (21 in Landusky and 23 in Zortman) being transferred into private ownership.

An additional 52 lots were determined to be suitable for disposal. Public auction for these lots was held in September 1970. After some of the liveliest bidding ever experienced in Phillips County, all but one lot was sold. Under existing regulations, any unsold lots would be available for purchase at their appraised price from the land office. The last lot was sold 5 days after the auction. The 52 lots were appraised at \$11,615. They sold for \$22,975 with bids ranging from \$175 to \$3,150.

One of the successful bidders was Charlie Kelsey, a rancher who has lived in the area 77 years. He bought a small cabin in Zortman in 1966 (too late for pre-

emption rights) and then had to bid for the lot occupied by the cabin.

Kelsey's knowledge of early days in the Little Rockies is a gold mine in its own right. His father, scouting for General Nelson A. "Bearcoat" Miles, was wounded during the Bearpaw battle, west of the Little Rockies, where Miles defeated Chief Joseph and his Nez Perce followers during their splendid but futile race to reach Canadian sanctuary from their Idaho homeland.

Kelsey met Butch Cassidy at a Zortman picnic in 1918 and knew Kid Curry and other members of the outlaw gang known as the Wild Bunch. He also knew Pete Zortman and Pike Landusky and recalls when Kid Curry shot and killed Landusky in Jew Jake's saloon.

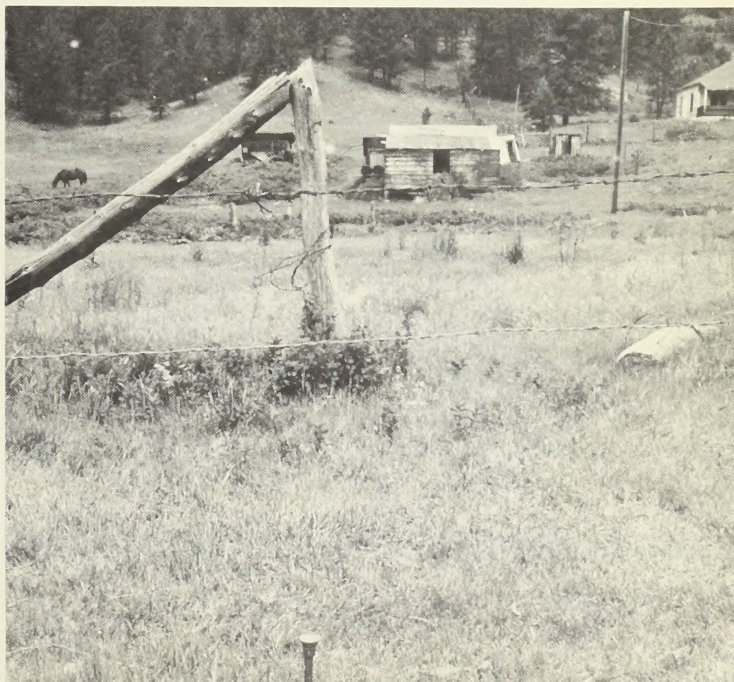
"Almost every other building in Zortman and Landusky were saloons in those days," Kelsey remembered.

Apparently most of the recreation during the mining period took place indoors, but other attractions are now generating interest in the Little Rockies country. Both whitetail and mule deer are found here in good numbers and the surrounding plains support an abundance of antelope and grouse.

History buffs are attracted by remnants of the mining era, and scenic beauty draws Sunday drivers and sightseers. Two new campgrounds and picnic areas have been constructed by BLM for visitors to this unique area, and food and lodging are available in Zortman.

And so, with the final chapter closed on the long struggle to "prove up," a new "bonanza" begins but this time it will provide enjoyment and recreation to all who seek it on the public lands adjoining two sturdy communities which refused to become ghost towns. □

BLM's survey stake (foreground) marks lot corner in Landusky.



COUSINS OF THE GALAPAGOS GIANTS



Still roam our southwestern deserts

WHERE'S THE least likely place you would expect to see a turtle? Most of us would answer, "in the dry desert." Not so with a species that roams the arid, public lands of the Lower Sonoran deserts of southeastern Nevada, southwestern Utah, and adjoining portions of California and Arizona.

This species is in fact true tortoises or land dwelling members of the turtle order. These strange creatures are the Desert Tortoise (*Gopherus agassiz*) which are close relatives of the lumbering giants of the Galapagos Islands off the coast of Ecuador.

By **ELBERT J. LOWRY**

Wildlife Management Biologist
BLM District Office, Cedar City, Utah

and

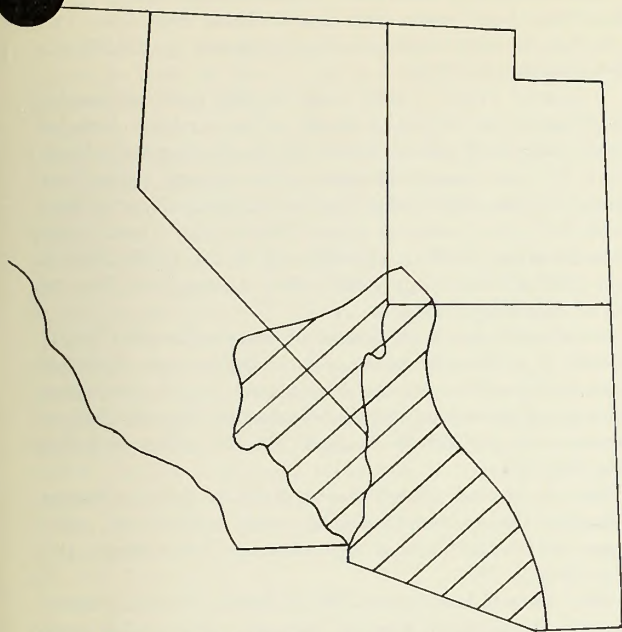
JIM YOAKUM

Wildlife Management Biologist
BLM State Office, Reno, Nev.

Tortoises are a very ancient group of reptiles dating back to the early Mesozoic Era, a staggering 200 million years of continued existence. Species of the tortoise family have adapted themselves to some of the most arid regions on earth. In the United States, you'll find them in four of the southwestern states (see map).

Like many other desert dwellers, the tortoise can survive for months with no evident water supply because he drinks copiously when afforded the opportunity and stores the water until needed. Two sacs beneath his shell hold water for his hibernation period and against the time when no succulent vegetation is at hand. He can go without food for as long as a year, but he eats large quantities when food is readily available. He is a vegetarian by nature, choosing plants which give him water for his body needs: Sagebrush, burrow-brush, cactus, grasses, and—his special delicacy—desert forbs.

To these "never hurrying" denizens of the desert some authorities give credit to having the highest degree of intelligence among reptiles. The tortoise appears to exhibit reasoning powers comparable to some warm blooded animals. He is accorded this status because of his social behavior characteristics, such as his home building and winter gregariousness.



Approximate range of Desert Tortoise in southwestern United States.

In mid-summer the heat in his home range is so great that no animal is able to survive unless protected from the sun's rays and the high temperature. In winter, night temperatures often fall below freezing. Like other cold-blooded reptiles that cannot control their body temperatures, tortoises are sensitive to cold and heat. Consequently they are most active during summers between the cold mornings and the early heat of the day.

With human-like reasoning, the tortoise has solved these problems by digging underground tunnels which become air-conditioned retreats in summer and cozy sleeping quarters in winter. He digs two types of dens. One is a large deep "apartment house" type burrow which is used by groups of tortoises to hibernate during the cold winter months. The other is a smaller and shorter den which is used by the individual to escape the summer heat.

The tortoise is brownish in color, blending into the surrounding desert habitat. His most well known characteristic is his lack of speed and this is justifiable for he moves at a stolid pace of about 20 feet per minute. He becomes mature within 5 to 6 years and reaches his maximum size, 10-12 inches, in 15 to 20 years. He has a long life potential and may live to attain a ripe old age of 100 to 120 years. Although there are no

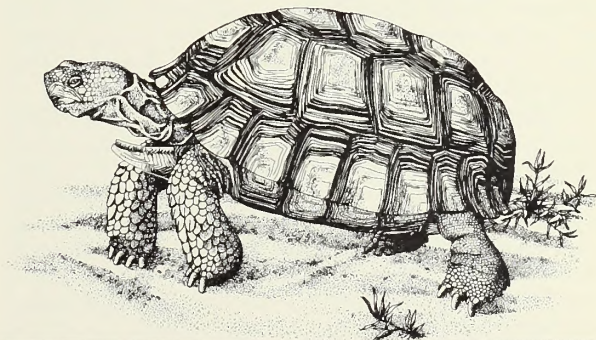
definite records as to how long desert tortoises live, it is reported one lived in captivity for 152 years.

When summer and fall arrive, the female digs a shallow nest and carefully deposits from two to six snow-white eggs. These are covered with sand, later to hatch from August to November. The young, like the old, are masters of concealment since this is their only means of defense, for they do not run or attempt to escape when approached. Desert tortoises were formerly a source of food for some southwestern Indian tribes, and shells were also used for utensils. Today it is doubtful they provide much to the family menu.

The major problem causing this slow desert traveler's demise is the happy-go-lucky person picking up a small tortoise to take home for a pet even though State laws prohibit such actions. Almost invariably this venture ends with unintentional death to the friendly reptile. Regardless, another animal has been taken from its natural environment and less tortoises remain to reproduce in the future. This problem continues at an alarming rate because of the increased number of visitors to desert recreation lands.

To protect this creature, he has been placed on the list of Rare and Endangered Species. Not every visitor to the public desert lands will see him, but one place to watch for him is on the roads and highways where his plodding gait works to do him harm from motorists. Watch for him and give him a "brake!"

If you're lucky enough to spot him taking the air and searching out his meal, look him over without fear. Examine him in his natural home, but above all leave him alone, for all this inoffensive creature asks of man is to be left in the wild to enjoy the same peaceful life he has pursued for millions of years before man came to this continent. □





This is a compilation of the most up-to-date information possible on up-coming sales of public lands by land offices of the Bureau of Land Management. For details of land descriptions, prices, and other information pertinent to sales, you must write the individual land office concerned. In most cases, there are adjoining land-owners who have statutory preference rights and may wish to exercise them to buy the land. Sales notices will point out, insofar as possible, problems relating to (1) access, (2) adjoining owner preference rights, (3) small-tract sales limitation of one per customer, and other pertinent information. When possible, all sales are scheduled far enough in advance so ample notice can be given in Our Public Lands. Sales listed can be canceled on short notice for administrative and technical reasons. A listing of BLM land offices with addresses is found on the opposite page.

ARIZONA

80 A, 6 miles south of Safford, ½ mile west of Highway 666. Access on east edge. Most utilities nearby. Gently sloping, traversed by small washes. App \$350 per acre.

43.77 A, 2 miles north of Safford. Access available. Most utilities nearby. Land is desert bench land above Gila River flood plain. App \$135 per acre.

CALIFORNIA

120 A, 2 air miles north of Miramonte, Fresno County. Rough, rocky. No water; no public road access. Query Sacramento Land Office for details. App \$9,000.

MONTANA

5 isolated tracts, 10 air miles northeast of Ashland, Powder River County. Moderately sloping grassland to very steep. All have timbered, rocky ridges with transecting coulees. Soil varies from thin breaks and scoria hills to steep sandy. Vegetation dense and vigorous, blue grama, needle and thread, bluestem wheatgrass, prairie junegrass. Tract 2 access by county road, rest no legal access. No water. Tract 1, 45.4 A, app \$1,135; Tract 2, 3, and 4, each 40 A, each app \$1,000; Tract 5, 317 A, app \$7,925, plus pub on all tracts. Sale May 25, 1971.

2 isolated tracts, 1.5 miles north of Belle Creek, Powder River County. Moderately sloping grasslands to steep rocky ridges, outcrops of scattered Ponderosa no commercial value. Soil sandy, silty loam on moderate slopes, shallow sandy on thinbreaks. Vegetation mostly blue grama, needle and thread, prairie junegrass. No water. Tract 1, 40 A, app \$1,400, no access. Tract 2, 80 A, app \$2,800, plus pub on each. Graded county road transects Tract 2, 80 A, app \$2,800, plus pub on each. Graded county road transects Tract 2. Sale May 25, 1971.

320 A, isolated, app \$8,000 plus pub, 28 miles northwest of

Malta, Phillips County. No water, no legal access. 2 deep coulees, rocky soils, good grass, forbs, fringed sage. Sale May 25, 1971.

40 A, isolated, 12 miles east of Malta, Phillips County. Near flat. Year round water from Beaver Creek. Soils heavy clay, alluvium. Western wheatgrass. No legal access. App \$1,080 plus pub. Sale May 25, 1971.

5 isolated Tracts, 3 miles east, 12 miles north of Sumatra, Rosebud County. Gently to steeply rolling, sandstone rims and buttes, soils sandy-silty to heavy clay. Sagebrush-grassland complex: big sage western wheatgrass, blue gramma, prairie junegrass, and threadleaf sedge. Dam on private land backs water onto Tract 4, no water on others. Tracts 1 and 3 have access, none on others. 40.18 A, app \$560. 120 A, app \$1,680. 38.26 A, app \$350. 617.84 A, app \$6,800. 54.62 A, app \$760. Plus pub on all. Sale May 25, 1971.

2 isolated Tracts, 6 miles south of Sumatra, Rosebud County. Gently to moderately rolling, silty to heavy clays, sagebrush-grassland complex: bigsage, blue gramma, green needlegrass, blue bunch wheatgrass, and threadleaf sedge. No water. No legal access. 40 A, app \$560. 80 A, app \$1,120. Plus pub on both. Sale May 25, 1971.

6.61 A, isolated, 25 miles west of White Sulphur Springs, Meagher County. Gently sloping, rocky sandy loam, native grass and browse. No water. No legal access. App \$180 plus pub. Sale May 25, 1971.

40 A, isolated 5 miles east of White Sulphur Springs, Meagher County. On northwest slope of steep ridge. Soil shallow sandy loam. Native grass, some trees. No water. No access. App \$1,080 plus pub. Sale May 25, 1971.

40 A, isolated, 18 miles south of Lewistown, Fergus County. Moderately steep to steep. Soil shallow clay loam. Small shrubs, native grasses. Largely covered with Ponderosa Pine, Douglas Fir, not commercial. No water. No legal access. App. \$1,700 plus pub. Sale May 25, 1971.

160 A, 12 miles east of Suffolk, Fergus County. Isolated; hilly to steep. Shallow silty clay soils underlain with shale; some evidence of sheet and gully erosion. Perennial grasses include western wheatgrass, needlegrass and big sagebrush. Scattered Ponderosa pine of no commercial value. Intermittent stream crosses land. No legal access. App \$1,920 plus pub. Sale May 25, 1971.

18 A, 2 miles west of Heron, Sanders County. Isolated; moderately level, sloping slightly to Clark Fork River at base of tract. A high steep bluff about 35 feet above the water runs along the total river frontage of the tract. Clay loam soil supports various forbs, grasses and ferns, and western larch, Douglas fir, Ponderosa pine, and lodgepole. Some trees exceed 18 inches in diameter. Small spring near north edge. Paved public road crosses tract. Electricity available. App \$8,100 plus pub. Sale May 25, 1971.

NEVADA

48 tracts, ranging from 5 A to 4,380 A, White Pine, Lincoln, Clark, Humboldt, Elko, Washoe, and Douglas counties. Query Nevada Land Office for sale dates, appraised values, and other information.

NEW MEXICO

26.02 A, 3 miles southeast of Mosquero, Harding County. Moderately rolling juniper woodland with fair understory of native grasses. Electricity and telephone within 2 miles. No legal access; physical access by 2 miles of ranch trail road. App \$500.

40 A, 14 miles southeast of Mountainair, Torrance County, and 90 miles southeast of Albuquerque. Moderately rolling na

tive grassland with scattered juniper. Elvation 6,700. Good access from paved State Highway 10 via 2¼ miles of gravelled State Road 41 which crosses tract. Electricity 1 mile north. App \$840. 42 A, 9 air miles northeast of Anthony, Dona Ana County, and 5 miles north of New Mexico-Texas state line. Unimproved grazing land; no utilities. Corners on State Road 213. Adjoining private lands are being subdivided into lots and small acreage homesites. App \$300 per A.

44.69 A, 10½ air miles northeast of Anthony, Dona Ana County, and 5½ miles north of New Mexico-Texas state line. Level grazing land; no utilities. App \$200 per A.

640 A, 7 miles southeast of Mayhill and 4 miles east of Weed. Otero County. Rolling hills, abrupt in spots with a few relatively level areas between hills. Moderate to heavy juniper-pinon and oakbush. Legal access. Electricity within ½ mile; water on private property within ½ mile. App \$20 to \$25 per A.

160 A, 3½ miles east of Carlsbad. Relatively level, sandy, much mesquite. No legal access. Electricity within ½ mile; water on private property within ½ mile. App \$25 to \$35 per A.

4 tracts 35 miles southeast of Albuquerque, Bernalillo County. Moderately rolling juniper woodland. El. 6,500 ft. in extreme eastern foothills of Manzanita Mountains. No legal or physical access. From ¾ to ½ mile from public roads and adjacent landowners not likely to grant access. REA, telephone lines from ½ to 2 miles. 25 A, app \$25; 12.36 A, app \$315; 1.13 A, app \$30; 3.82 A, app \$100.

2 tracts 28 miles southwest of Las Vegas and 38 miles southeast of Santa Fe, San Miguel County. Rolling open grassland to steeply rolling juniper woodland. El. from 5970 to 6120 ft. Adjacent to picturesque irrigated Pecos River valley. 120 A, app \$2,160, access from I-25, Villanueva Exit, south 7 miles on paved State Highway 3 to south edge of village of Pueblo, 1 mile by gravel county road. 3.87 A, app \$70, nearby but no legal access.

UTAH

320 A, 14 miles northeast of Monticello, San Juan County. High rough benchland, shallow rocky soils, too rough for cultivation. Pinon-juniper-sagebrush vegetation, suitable for grazing. Isolated from other public domain which it adjoins on one side by a high sheer canyon wall. No water, improvements, or utilities. No legal access; physical access by county road to within 1 mile, then by primitive dirt road over private land. App \$5,120.

200 A, isolated, 5 miles northeast of Blanding, San Juan County. Bisected lengthwise by rocky wash with topography on both sides of wash rolling to rough. Soils are shallow to medium depth sandy clay loams and rocky; not suitable for agriculture. Pinon-juniper, sagebrush, grass vegetation suitable for grazing. Fence on adjoining land on two sides of tract; no water or other improvements. No utilities. Legally accessible by good graded county road. App \$3,000.

40 A, isolated, 5 miles north of Blanding, San Juan County. Bisected by steep canyon wall; part of tract on rough rim above and part in canyon bottom. Soils are mostly shallow and rocky with some moderately deep sandy clay loam in canyon bottom. Not suitable for agricultural or homesite development. Pinon-juniper, browse, sage, grass vegetation suitable for grazing. Irrigation ditch and domestic water pipeline for town of Blanding cross part of tract. No utilities. Legally accessible by paved county road on tract. App \$600.

40 A, isolated, 7 miles southwest of Laketown, Rich County. Topography is a rough, hilly high ridge with shallow to medium depth mountain loam soil. Not suitable for agricultural or

homesite development. Aspen, browse, sagebrush, native grass vegetation, suitable for grazing. No water, improvements, or utilities. Accessible by ¼ mile of jeep trail from dirt road; legal access uncertain. App \$800.

40 A isolated, 5 miles north of Blanding, San Juan County. Bisected by steep canyon wall so part is on rocky rim, part in bottom. Soils shallow, rocky, some moderately deep sandy clay loam in canyon bottom, not suitable agriculture or homesite development. Pinon-juniper, browse, sage, grass vegetation, suitable for grazing. Culinary water pipeline for town of Blanding plus irrigation ditch cross part of tract. No utilities. Legal access by paved county road on tract. App \$600.

40 A isolated, 7 miles southwest of Laketown, Rich County. Rough hilly high ridge. Shallow to medium depth mountain loam, not suitable for agricultural or homesite development. Aspen, browse, sagebrush, native grass vegetation, suitable for grazing. No water, improvements, or utilities. Access by ¼ mile jeep trail from dirt road, legal access uncertain. App \$800.

WYOMING

The following sales in Wyoming are scheduled after May 1, 1971. Query Wyoming Land Office for costs and other details.

40 A, 15 miles northeast of Pinedale, Sublette County. Rolling sagebrush land. Forty Rod Creek touches one corner. Surrounded by private lands. No public access.

79.85 A, 17 miles southeast of Ten Sleep, Washakie County. Gently to strongly rolling. Surrounded by private lands. No legal access.

3 Tracts, 3 miles east of Lingle, Goshen County. All surrounded on all side by private lands. Gentle to strongly rolling. 40 A, 80 A, and 80 A. No legal access.

Bureau of Land Management Land Offices

ALASKA:
555 Cordova St.
Anchorage, Alaska
99501
516 Second Ave.
Fairbanks, Alaska
99701

ARIZONA:
Federal Bldg.,
Room 204
Phoenix, Ariz. 85025

CALIFORNIA:
2800 Cottage Way,
Room E-2841
Sacramento, Calif.
95825
1414 University Ave.
Riverside, Calif.
92502

COLORADO:
14027 Federal Bldg.
Denver, Colo. 80202

IDAHO:
Federal Bldg.,
Room 334
550 W. Fort St.
Boise, Idaho 83702

MONTANA (N. Dak.,
S. Dak.):
Federal Bldg.
316 North 26th St.
Billings, Mont. 59101

NEVADA:
Federal Bldg.,
300 Booth St.
Reno, Nev. 89505

NEW MEXICO (Okla.):
Federal Bldg.
Santa Fe, N. Mex.
87501

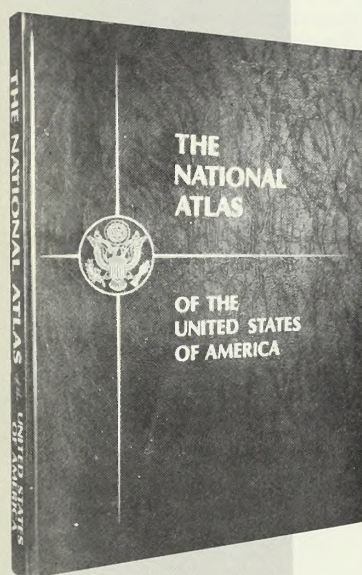
OREGON:
729 Northeast
Oregon St.
Portland, Oreg. 97232

UTAH:
Eighth Floor,
Federal Bldg.
125 South State St.
P.O. Box 11505
Salt Lake City, Utah
84111

WASHINGTON:
729 Northeast
Oregon St.
Portland, Oreg. 97232

WYOMING (Nebr.,
Kans.):
2120 Capitol Ave.
Cheyenne, Wyo.
82001

ALL OTHER STATES:
Robin Bldg.
7981 Eastern Ave.
Silver Spring, Md.
20910



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